

WHAT IS CLAIMED IS:

1. A method for use of a computer-assisted surgery system during a medical procedure, comprising:
  - receiving information on an object of interest;
  - tracking the position of a tool;
  - determining a scalar distance between a current position of said tool and said object of interest; and
  - providing an indication of said scalar distance to a user of said tool.
2. The method of claim 1, wherein said providing step comprises providing a visual indication of said scalar distance to said user of said tool.
3. The method of claim 2, further comprising, prior to said providing step, selecting a type of visual indication to provide to said user.
4. The method of claim 2, wherein said visual indication is provided by a visual indicator selected from the group consisting of a level meter, a dial, a numerical display, and a graph.
5. The method of claim 2, wherein said providing step comprises providing said visual indication of said scalar distance on a display device associated with a computer-assisted surgery system.
6. The method of claim 2, wherein said providing step comprises providing said visual indication of said scalar distance on a display device disposed on a haptic device associated with said computer-assisted surgery system.
7. The method of claim 2, wherein said providing step comprises providing said visual indication of said scalar distance on a display device disposed on a surgical tool used in proximity to an anatomy of a patient.
8. The method of claim 3, further comprising selecting a color for said visual indication based at least in part on said scalar distance.

9. The method of claim 2, further comprising, prior to said providing step, selecting said visual indication based at least in part on said scalar distance.

10. The method of claim 2, wherein said object of interest comprises a surface of a haptic object defining a desired shape for an anatomy of a patient.

11. The method of claim 2, wherein said object of interest comprises a portion of an anatomy of a patient.

12. The method of claim 2, wherein said object of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.

13. The method of claim 2, wherein said providing step comprises providing a predetermined visual indication indicating that said scalar distance is within an acceptable range.

14. The method of claim 2, wherein said providing step comprises providing a predetermined visual indication indicating that said scalar distance is in an unacceptable range.

15. The method of claim 1, wherein said providing step comprises providing a tactile indication of said scalar distance to said user of said tool.

16. The method of claim 1, wherein said providing step further comprises causing vibration of a device that is in contact with said user.

17. The method of claim 1, further comprising selecting a type of indication based at least in part on said scalar distance.

18. The method of claim 1, wherein said providing step comprises providing said indication indicating that said scalar distance is within an acceptable range.

19. The method of claim 1, wherein said providing step comprises providing said indication indicating that said scalar distance is in an unacceptable range.

20. The method of claim 1, wherein said object of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.

21. The method of claim 1, wherein said providing step comprises providing an audio indication of said scalar distance to said user of said tool.

22. The method of claim 21, further comprising, prior to said providing step, selecting a type of audio indication to provide to said user.

23. The method of claim 21, wherein said providing step comprises providing said audio indication of said scalar distance via an audio device associated with a computer-assisted surgery system.

24. The method of claim 21, wherein said providing step comprises providing said audio indication of said scalar distance via an audio device disposed on a haptic device associated with a computer-assisted surgery system.

25. The method of claim 21, wherein said providing step comprises providing said audio indication of said scalar distance via an audio device disposed on a surgical tool used in proximity to an anatomy of a patient.

26. The method of claim 21, further comprising, prior to said providing step, selecting said audio indication based at least in part on said scalar distance.

27. The method of claim 21, wherein said object of interest comprises a surface of a haptic object defining a desired shape for an anatomy of a patient.

28. The method of claim 21, wherein said object of interest comprises a portion of an anatomy of a patient.

29. The method of claim 21, wherein said object of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.

30. The method of claim 21, wherein said providing step comprises providing a predetermined audio indication indicating that said scalar distance is within an acceptable range.

31. The method of claim 21, wherein said providing step comprises providing a predetermined audio indication indicating that said scalar distance is in an unacceptable range.

32. A computer-assisted surgery system for use during a medical procedure, comprising:

application logic operatively associated with said computer-assisted surgery system and operable to:

- receive information on an object of interest;
- track the position of a tool;
- determine a scalar distance between a current position of said tool and said object of interest; and
- provide an indication of said scalar distance to a user of said tool.

33. The system of claim 32, wherein said application logic is further operable to provide a visual indication of said scalar distance to said user of said tool.

34. The system of claim 33, wherein said application logic is further operable to select a type of visual indication to provide to said user.

35. The system of claim 33, wherein said visual indication is provided by a visual indicator selected from the group consisting of a level meter, a dial, a numerical display, and a graph.

36. The system of claim 33, wherein said application logic is further operable to provide said visual indication of said scalar distance on a display device associated with said computer-assisted surgery system.

37. The system of claim 33, wherein said application logic is further operable to provide said visual indication of said scalar distance on a display device disposed on a haptic device associated with said computer-assisted surgery system.

38. The system of claim 33, wherein said application logic is further operable to provide said visual indication of said scalar distance on a display device disposed on a surgical tool used in proximity to an anatomy of a patient.

39. The system of claim 34, wherein said application logic is further operable to select a color for said visual indication based at least in part on said scalar distance.

40. The system of claim 33, wherein said application logic is further operable to select said visual indication based at least in part on said scalar distance.

41. The system of claim 33, wherein said object of interest comprises a surface of a haptic object defining a desired shape for an anatomy of a patient.

42. The system of claim 33, wherein said object of interest comprises a portion of an anatomy of a patient.

43. The system of claim 33, wherein said object of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.

44. The system of claim 33, wherein said application logic is further operable to provide a predetermined visual indication indicating that said scalar distance is within an acceptable range.

45. The system of claim 33, wherein said application logic is further operable to provide a predetermined visual indication indicating that said scalar distance is in an unacceptable range.

46. The system of claim 32, wherein said application logic is further operable to provide a tactile indication of said scalar distance to said user of said tool.

47. The system of claim 32, wherein said application logic is further operable to cause vibration of a device in contact with said user.

48. The system of claim 32, wherein said application logic is further operable to select a type of indication based at least in part on said scalar distance.

49. The system of claim 32, wherein said application logic is further operable to provide said indication indicating that said scalar distance is within an acceptable range.

50. The system of claim 32, wherein said application logic is further operable to provide said indication indicating that said scalar distance is in an unacceptable range.

51. The system of claim 32, wherein said surface of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.

52. The system of claim 32, wherein said application logic is further operable to provide an audio indication of said scalar distance to said user of said tool.

53. The system of claim 52, wherein said application logic is further operable to select a type of audio indication to provide to said user.

54. The system of claim 52, wherein said application logic is further operable to provide said audio indication of said scalar distance via an audio device associated with said computer-assisted surgery system.

55. The system of claim 52, wherein said application logic is further operable to provide said audio indication of said scalar distance via an audio device disposed on a haptic device associated with said computer-assisted surgery system.

56. The system of claim 52, wherein said application logic is further operable to provide said audio indication of said scalar distance via an audio device disposed on a surgical tool used in proximity to an anatomy of a patient.

57. The system of claim 52, wherein said application logic is further operable to select said audio indication based at least in part on said scalar distance.

58. The system of claim 52, wherein said object of interest comprises a surface of a haptic object defining a desired shape for an anatomy of a patient.

59. The system of claim 52, wherein said object of interest comprises a portion of an anatomy of a patient.

60. The system of claim 52, wherein said object of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.

61. The system of claim 52, wherein said application logic is further operable to provide a predetermined audio indication indicating that said scalar distance is within an acceptable range.

62. The system of claim 52, wherein said application logic is further operable to provide a predetermined audio indication indicating that said scalar distance is in an unacceptable range.

63. The system of claim 52, wherein said application logic comprises computer executable software code.

64. The system of claim 32, wherein said computer-assisted surgery system is a haptic device.

65. The system of claim 32, wherein said computer-assisted surgery system comprises a haptic device.

66. A computer readable storage medium storing instructions which when executed by a computer cause the computer to execute the steps of:

receiving information on a object of interest;

tracking the position of a tool;

determining a scalar distance between a current position of said tool and said object of interest; and

providing an indication of said scalar distance to a user of said tool.

67. The computer readable storage medium of claim 66, wherein said indication is a visual indication.

68. The computer readable storage medium of claim 66, wherein said indication is an audio indication.

69. The computer readable storage medium of claim 66, wherein said indication is a tactile indication.

70. The computer readable storage medium of claim 66, further comprising instructions which when executed by said computer cause the computer to execute the step of selecting a type of indication based at least in part on said scalar distance.

71. The computer readable storage medium of claim 66, further comprising instructions which when executed by said computer cause the computer to execute the step of providing said indication indicating that said scalar distance is within an acceptable range.



72. The computer readable storage medium of claim 66, further comprising instructions which when executed by said computer cause the computer to execute the step of providing said indication indicating that said scalar distance is within an unacceptable range.

73. The computer readable storage medium of claim 66, wherein said object of interest is selected from the group consisting of a curve, a point, a surface, a volume, and a set of desired positions.